AMENDMENTS TO THE CLAIMS

Claims 1-7 (Canceled)

8. (Currently Amended) A system for manipulating biological data comprising:

a processor;

a local format infrastructural layer executable by said processor and configured to transform specific biological information represented in a text, experimental data or biological diagram ~~format~~ to a local format in which the specific biological information is represented in local format objects in a canonical or abstract representation that provides a common format, such that data from said text format, said experimental data forma and said biological diagram format are all representable in said local format and are exchangeable and useable together;

a library of re-usable stencils for representing biological interactions;

means for selecting stencils to be populated with said specific biological information;

means for assigning specific biological data to selected stencils; and

a display for displaying stencils with the assigned specific biological data.

9. (Original) The system of claim 8, further comprising means for connecting common elements of said stencils with assigned specific biological data to display a biological diagram having said stencils as components thereof.

10. (Original) The system of claim 8, further comprising means for designing and saving additional stencils not previously contained in said library.

11. (Original) The system of claim 8, further comprising means for modifying, copying and/or deleting stencils contained in said library.

12. (Original) The system of claim 8, further comprising means for designing and associating rules with said stencils.

13. (Original) The system of claim 12, further comprising means for rule checking said rules to validate an interaction represented by a stencil containing specific biological data.

14. (Original) The system of claim 13, further comprising means for rule checking said rules against additional data.

15. (Original) The system of claim 14, wherein said additional data comprises data contained within a pre-existing biological diagram.

16. (Original) The system of claim 14, wherein said additional data comprises experimental data.

17. (Original) The system of claim 14, further comprising means for overlaying results of said rule checking on a network diagram.

18. (Original) The system of claim 8, further comprising means for navigating to data selected from said specific biological data and displayed on at least one of said stencils.

19. (Original) The system of claim 8, further comprising means for comparing, among two or more selected stencils, specific data assigned thereto and displaying results of said comparison.

20. (Previously Presented) The system of claim 19, wherein said displayed results are in terms of at least one of: differences and contradictions.

21. (Original) The system of claim 19, further comprising means for mapping between said selected stencils containing specific biological data and an existing biological diagram.

22. (Original) The system of claim 8, further comprising means for adding elements to a stencil on said canvas or creating a stencil on said canvas by freehand sketching by the user.

23. (Original) The system of claim 8, further comprising means for merging said stencils with a biological network and means for displaying said stencils merged with said biological network.

24. (Original) The system of claim 8, further comprising means for comparing a plurality of said stencils, using graph theoretic methods.

25. (Original) The system of claim 24, wherein said graph theoretic methods techniques to determine at least one characteristic selected from the group consisting of: a shortest path in a network; at least one spanning tree; degrees of connectedness; graph width; redundancy; redundant paths; alternative paths; graph traversal, identification of a subgraph, and identification of a motif structure within a graph.

26. (Previously Presented) The system of claim 8, further comprising means for linking the displayed stencils with other sources of biological data from which the specific biological data was extracted, using a local formatting language of said local format infrastructural layer.

27. (Original) The system of claim 8, further comprising means for annotating at least a portion of at least one of said stencils.

28. (Original) The system of claim 27, wherein annotations produced by said means for annotating include at least one of the annotations selected from the group consisting of: freehand drawings, text, images, links to data, and data.

29. (Original) The system of claim 27, further comprising means for overlaying annotations produced by said means for annotating on a biological diagram.

Claims 30-50. (Canceled)

51. (Previously Presented) The system of claim 8, wherein each stencil in said library of re-usable stencils comprises:

graphical elements representing entities and at least one interaction; each said graphical element comprising biological semantics representative of a particular type of biological entity or interaction; and

slots for providing specific biological information, including specific entity names and directionality of interactions.

52. (Previously Presented) The system of claim 51, wherein a visual grammar is represented in a local format of said local format infrastructural layer, enabling interactive functions to be performed among biological diagrams, textual documents and experimental data.

53. (Previously Presented) The system of claim 52, wherein, when said slots are filled with said specific biological information, said specific biological information is automatically added to the local format.

54. (Previously Presented) The system according to claim 8, wherein said stencils can exist at multiple levels of abstraction, ranging from molecular interactions to higher-level biological concepts.

55. (Previously Presented) The system of claim 8, wherein stencils can be composed hierarchically to compose relatively more complex stencils from relatively simpler stencils.

56. (Previously Presented) The system of claim 8, wherein said stencils are collaboratively useable among multiple users.

57. (Previously Presented) The system of claim 56, wherein collaborative use of stencils is afforded by at least one of the members of the group consisting of: providing a blank set of stencils as a starter template, sharing of filled-in stencils, and collaboratively filling in stencils.

58. (Currently Amended) A system for manipulating biological data comprising:

a processor;

a local format infrastructural layer executable by said processor and configured to transform specific biological information represented in a text, experimental data or biological diagram to a local format in which the specific biological information is represented in local format objects in a canonical or abstract representation that provides a common format, such that data from said text format, said experimental data forma and said biological diagram format are all representable in said local format and are exchangeable and useable together;

a library of re-usable stencils for representing biological interactions;

means executable using said processor for selecting stencils to be populated with specific biological information;

means for assigning specific biological data to selected stencils; and

a display for displaying stencils with the assigned specific biological data,

wherein each stencil in said library of re-usable stencils comprises:

graphical elements representing entities and at least one interaction; each said graphical element comprising biological semantics representative of a particular type of biological entity or interaction; and

slots for providing specific biological information, including specific entity names and directionality of interactions.